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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,227	09/08/2003	Soichiro Ogawa	50340-156	1064

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McDERMOTT, WILL & EMERY  
600 13th Street, N.W.  
Washington, DC 20005-3096

EXAMINER
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ECHELMEYER, ALIX ELIZABETH

ART UNIT	PAPER NUMBER
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1745

MAIL DATE	DELIVERY MODE
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06/14/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/656,227

Applicant(s)

OGAWA, SOICHIRO

Examiner

Alix Elizabeth Echelmeyer

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 5-8-07.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 25, 2007 has been entered.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2 and 5-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Hatano et al. (Japanese Publication Number 2001-143742).

Hatano et al. teach a mounting structure for a fuel cell stack in a vehicle (abstract).

Regarding claim 1, the structure includes endplates at either end of a fuel cell stack that permit the stack to expand and contract in the direction of lamination ([0037],

[0058]). The mounting structure also includes rubber mounting to fix the fuel cell structure to the car ([0038]).

In Hatano et al., a case is formed by two plates, an adaptor plate and a backup plate, which are fixed on either end of the fuel cell stack, 148 and 152 (Figure 7, [0035]). The mechanism within the case that allows for the expansion and contraction is the disc springs 146 of Hatano et al., disposed between the stack and the plate 152 (Figure 7, [0036]). The adaptor and backup plates neither expand nor contract with the fuel cell stack.

As for claim 2, Hatano et al. teach that one of the plates, attached to the piping device for supply and discharge of fuel gas, oxidant gas, and a cooling medium, moves to allow for expansion and contraction of the fuel cell while the other plate is fixed ([0017]).

Regarding claims 5 and 6, Hatano et al. teach a bolt to secure the fixed endplate to the mounting structure (Drawing 2, [0017]). It can be seen from the drawing that the bolt is perpendicular to the endplate and passes through the portion that extends beyond the plane of the plate.

As for claims 7 and 8, Hatano et al. teach that the endplates are made of conducting material such as copper ([0031]).

Claim 9 of the instant application is drawn to the connection of two fuel cell stack units arranged in parallel. Hatano et al. teach this arrangement, including the same fluid supply/discharge system used at the movable end of the stacks (Drawing 1).

Regarding claims 10 and 11, Hatano et al. also teach a bolt connect the piping device to the mounting structure (Drawing 2).

As for claim 12, Hatano et al. are silent on the materials used to make the piping device for delivery of fluids to and from the fuel cell stack. However, Hatano et al. do teach that the piping device is connected to the electrically conductive endplate. The piping device would inherently be made of electrically nonconductive materials since, if it were not, it would conduct the energy generated by the fuel cell stack away from the end plate, thus disallowing all of the energy generated to be used for the load for which it was intended. Further, the energy that might be conducted to the piping device were it made of electrically conductive materials could cause the contents of the piping device to be heated, negating the purpose of the cooling fluid.

As for claim 13, Hatano et al. teach brackets for mounting the fuel cell stack to a car, including a rubber mounting ([0037]-[0038]).

Claim 14 requires the limitations of claim 1, which is rejected above. Further, Hatano et al. teach an installation plate, reference numeral 31 in drawings 2 and 12, to which the bolts attach the fuel cell stack ([0037]).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatano et al. in view of Chen (US Patent Number 6,274,258).

The teachings of Hatano et al. as discussed above are incorporated herein.

Hatano et al. teach the fuel cell system but fail to teach an expansion/contraction mechanism.

Chen teaches that the endplates of a fuel cell that is allowed to thermally expand and contract have scalloped edges to engage the inside surface of the outer case (abstract; Figure 1; column 4 lines 54-56). Further, fuel feed tubes are arranged to pass through the corrugations of the endplate (column 5 lines 55-59).

It would be advantageous to use the endplate of Chen in the fuel cell system of Hatano et al. because the scalloped edges, like depressions and projections of the instant application, engage the inner surface of the case and prevent rotation of the endplate. Further, the fuel feed tubes serve as a seal to prevent fuel from escaping the tubes before it is introduced to the stack.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the endplate of Chen in the fuel cell system of Hatano et al. in order to engage the inner surface of the casing and prevent rotation of the endplate.

### ***Response to Arguments***

6. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alix Elizabeth Echelmeyer whose telephone number is 571-272-1101. The examiner can normally be reached on Mon-Fri 7-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Susy N. Tsang-Foster can be reached on 571-272-1293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Alix Elizabeth Echelmeyer  
Examiner  
Art Unit 1745

aee

*Susy Tsang Foster*  
Susy Tsang Foster  
Supervisory Patent Examiner